

REMARKS/ARGUMENTS

In the specification, paragraph [0044] has been amended to correct a clerical error. More specifically, in the originally filed application, the Applicants transposed the NRC values for the prime coated mineral fiberboard, 0.70, and the prime coated mineral fiberboard having the coating of the invention applied thereto, 0.65. As clearly set forth in paragraph [0027], Applicants' coating and underlying method of application "preserves", i.e. minimizes the impact on, the acoustical characteristics of a substrate. Applicants do not assert in this application, other than in paragraph [0044], that the coating and method of application actually enhances the acoustical characteristics of a substrate. Applicants respectfully submit that one of ordinary skill in the art would recognize this error as clerical.

Claims 23 and 26-33 have been amended. Applicants note that claims 27 and 28 have been amended to address clerical errors. Claims 24, 25 and 34-47 have been cancelled. Claims 1-22 and 48-52 have previously been withdrawn as a result of an earlier restriction requirement. Claims 53 and 54 have been added. Thus, claims 23, 26-33, 53 and 54 remain in this application.

It should be noted that Applicants have amended claim 27 to provide a proper listing of secondary particles as recited in paragraph [0024] of the application.¹

¹ In the originally filed application, Applicants mistakenly listed the possible "binder compounds" in claim 27 instead of the proper listing of secondary particles.

35 U.S.C. 103(a) Rejections

Claims 23-33 were rejected under 35 U.S.C. 103(a) as being unpatentable over European patent document no. 761,776 (hereafter "Sensenig").

Claims 34-37 were rejected under 35 U.S.C. 103(a) as being unpatentable over document no. 761,776 in view of European patent document No. 950,646.

Though the Examiner acknowledges that Sensenig does not disclose the claimed texture value or airflow value for the coated scrim, the Examiner states that "[i]t would have been obvious to one of ordinary skill in the art to vary the porosity of the coated scrim" and that "[t]he coated scrim of the reference is considered to inherently possess the claimed texture value in view of the (Sensenig) reference's use of a coating containing particles of the same size as instantly claimed and in the same amount as instantly claimed."

Applicants respectfully submit that these rejections are moot in view of the amendments to independent claim 23 as hereafter described.

Applicants have amended claim 23 to include the limitation that the change in the value of airflow resistance between the scrim, i.e. the uncoated scrim, and the coated scrim is in the range from "240 mks rayls to 300 mks rayls."

Support for the upper limit of the change in air flow resistance, i.e. "300 mks rayls", is provided in paragraph [0031]. More specifically, in paragraph [0031]

Applicants state that:

An uncoated scrim 16 generally exhibits an airflow resistance value of less than 600 mks rayls, as well as a texture value of 11 ml/sq ft. In contrast, a coated scrim 14 exhibits an airflow resistance value of 900 mks rayls or less and a texture value of about 20 ml/sq ft or greater. In one

embodiment, the coated scrim 14 exhibits an airflow resistance in the range from about 600 to 900 mks rayls and a texture value in the range from about 20 ml/sq ft to about 65 ml/sq ft.

(Emphasis Added). Applicants respectfully submit that “about 600” includes 600. Thus, this excerpt teaches that when the coating of the invention is applied to a scrim having an airflow resistance of 600 mks rayls, the coating will increase the airflow resistance value from 600 mks rayls to a maximum of 900 mks rayls. Thus, Applicants respectfully submit that the description contained in paragraph [0031] provides support sufficient for the claimed change in airflow resistance value of “300 mks rayls”.

Support for the lower limit of the claimed range of “change in air flow resistance”, i.e. 190 mks rayls, is provided by the Applicants in paragraph [0040]. More specifically, in paragraph [0040] Applicants state the following:

The coating was uniformly applied onto an Owens Corning YK111 fiberglass scrim and then dried in a Hotpack oven at 300 °F for 5 minutes. The finished scrim exhibited a airflow resistance of 700 mks rayls.

(Emphasis Added). Applicants respectfully submit that this excerpt in combination with the attached Declaration of John Felegi provides support for the change in airflow resistance value between an uncoated Owens Corning scrim and a finished, i.e. coated, Owens Corning scrim. In his Declaration, Mr. Felegi explains that he tested the airflow resistance of two Owens Corning YK111 fiberglass scrims prior to coating and found one scrim to have an airflow resistance of 460 mks rayls and the other to have an airflow resistance of 510 mks rayls. Thus, Applicants submit that the Owens Corning YK111 fiberglass scrim inherently possesses an air flow resistance value of 460 mks rayls or greater. Thus, the change in air flow resistance was at least as low as 240 mks rayls, i.e.

700-460=240. Applicants submit that they have provided adequate support for a change in air flow resistance of at least as low as 240 mks rays as now recited in amended claim 23.

Those skilled in the art understand that high texture values and high hiding power values typically result in low acoustical performance. The reason is that achieving high hiding power and high texture values requires a relatively high application rate of coating and or filler particle size which typically negatively impact acoustic performance.

Applicants have departed from conventional wisdom and have minimized the negative impact of a textured coating on acoustics where the coating imparts to the underlying substrate a hiding power value, of "greater than 98%", and a texture value "in a range from about 20 ml/sq ft to about 65 ml/sq ft." As described throughout the application, all three claimed properties were achievable via the use of an HVLP spray gun. Air atomizing spray guns such as those described by Sensenig could not achieve all three properties when using the same application rates, filler particle size and filler particle concentration. The comparative illustration set forth in Table 1 of paragraph [0038] illustrates this point.

As shown in Table 1, examples 2 and 4 had essentially the same coating composition, particularly in terms of formulation and application rate, 64.5 and 63.8 gm/sq ft respectively. The acoustical substrates tested were Owens Corning YK111 fiberglass scrim. All other variables are the same except that the coating is applied using a different spray gun. In Example 2, the coating was spray applied using a conventional Binks Model 95 air atomization spray gun. By contrast, in Example 4, the coating was applied using an HVLP gun. Although the Binks Model 95 air atomization gun achieved

the same texture and visual as the HVLP gun, i.e. a texture value equal to 48 ml/sq ft and the "Dune" visual, the airflow resistance was much higher using the Binks Model 95 (1030 mks rays v. 660 mks rays). The reason for this difference is explained by the Applicants on page 8:

The HVLP spray gun provides a lower exit velocity to the coating composition than generally is provided by other air atomizing application methods, thereby minimizing bounce-back of the coating from the substrate and tending to generate larger droplets distributed in a more narrowly defined pattern. The HVLP spray apparatus tends to generate a discontinuous finish that exhibits a coarse texture and preserves the desired acoustical characteristics of the substrate.

Applicants reiterate that an HVLP spray gun is not described by Sensenig. In fact, beginning at page 3, line 55 and ending on page 4, line 8, Sensenig indicates that he used the same Owens Corning YK111 fiberglass scrim as the Applicants but was unable to minimize the impact the coating had on the scrims ability to pass sound. Please note, Sensenig discusses the passage of sound in terms of porosity, whereas Applicants quantify the passage of sound in terms of airflow resistance. Sensenig discusses the two measurements of sound passage on page 3, lines 45-47, stating:

Porosity [or] air flow is a measure of a material's ability to pass sound. Porosity as measured by the Frazier Air Flow Test or its equivalent is necessary for sound passage.

Applicants respectfully request the Examiner to note the similarity in the measurements of "porosity" and "airflow resistance" when considering Applicants following arguments.

Sensenig describes the importance of minimizing the effect of a coating on sound passage of the scrim to which it is applied. On page 4, beginning at line 2, Sensenig states:

As the porosity of the paint/scrim combination layer (i.e. a coated Owens Corning YK111 fiberglass scrim) decreases the ability of that layer to pass sound decreases. . . Less porous paint layers or paint/scrim layers can be compensated for [by] increasing the absorption of the substrate. . . The most efficient system overall [, however,] is one in which the absorption loss due to paint or paint/scrim is minimized.

However, in the sentence immediately following this excerpt, Sensenig further states:

The paint/scrim porosity should not be lower than 50 cfm/square foot. With the above paint coat, the above scrim itself requires a porosity of higher than 200 cfm/square foot.

By requiring the underlying scrim to have a porosity of “higher than 200 cfm/square foot”, Sensenig is in effect stating that his paint/coating will reduce porosity, and, in turn, the ability of the scrim to pass sound by 75%. In contrast, Applicants’ sound passage loss as now claimed in amended claim 23, i.e. “the change in the value of airflow resistance between the uncoated scrim and the coated scrim,” due to application of the coating of the invention is between 34% and 33%.² It is evident from Sensenig’s own admission that such a minimal change in the ability to pass sound is beyond that which he is describing. Thus, Applicants submit that Sensenig’s coating has a greater negative impact on the ability of the scrim to pass sound.

Moreover, Applicants submit that one of advanced skill in the art would not be motivated to use an HVLP gun as the atomizing spray gun described in Sensenig as HVLP guns are used to minimize airborne particulates and not to maximize any of the

² Applicants claimed upper limit for airflow resistance of 300 mks rayls reflects a change from 600 mks rayls to 900 mks rayls, i.e. approximately a 33% change in magnitude. Applicants claimed lower limit for airflow resistance of 240 mks rayls reflects a change from 460 mks rayls to 700 mks rayls, i.e. approximately a 34% change in magnitude.

desired characteristics set forth in claim 23, namely texture, hiding power and change in airflow resistance values.


For the above reasons, claim 23 as amended, and all claims which depend therefrom, should be found allowable. Applicants therefore request the rejection based on 35 U.S.C. 103(a) be withdrawn.

For the above reasons, claims 23, 26-33 and 53-55 are believed to be in condition for allowance and an early notice to such effect is earnestly solicited.

Respectfully submitted,

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Date



John M. Olivo
Registration No. 51,004
Attorney for Applicants

Armstrong World Industries, Inc.
P.O. Box 3001
Lancaster, PA 17604
(717) 396-2629 (Telephone)
(717) 396-6121 (Facsimile)